GE3 COMPUTER SCIENCE

C AND C ++ LECTURE SERIES *FOR*

B.SC 3RD SEMESTER *BY*

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LECTURE 2

C CHARACTERS SET

- Uppercase letters: A to Z
- Lowercase letters: a to z
- Digits: 0, 1, …, 9
- Special Characters:

+	–	*	/	=	%	&	#
!	?	^	"	'	~	\	|
<	>	(	)	[	]	{	}
:	;	.	,	_		*(blank space)*	

- **\b, \n** and \t to represent special conditions backspace, newline and horizontal tab

IDENTIFIERS

x	y12	sum_1	_temperature
names	area	tax_rate	TABLE

```
4th
"x"
order-no
error flag
```

KEYWORDS

auto	extern	sizeof
break	floatn	static
case	for	struct
char	goto	switch
const	if	typedef
continue	int	union
default	long	unsigned
do	register	void
double	return	volatile
else	short	while
enum	signed	

DATA TYPES

Data Type	*Description*	*Typical Memory Requirements*
`int`	integer quantity	2 bytes or one word (varies from one compiler to another)
`char`	single character	1 byte
`float`	floating-point number (i.e., a number containing a decimal point and/or an exponent)	1 word (4 bytes)
`double`	double-precision floating-point number (i.e., more significant figures, and an exponent which may be larger in magnitude)	2 words (8 bytes)

CONSTANTS

- **Integer Constants**

```
0          1          743          5280          32767          9999
```

- **Floating-Point Constants**

```
0.          1.          0.2          827.602
50000.      0.000743    12.3         315.0066
```

- **Character Constants**

```
'A'          'x'          '3'          '?'          ' '
```

American Standard for Information Interchange

ASCII Value	Character	ASCII Value	Character	ASCII Value	Character	ASCII Value	Character
0	NUL	32	(blank)	64	@	96	`
1	SOH	33	!	65	A	97	a
2	STX	34	"	66	B	98	b
3	ETX	35	#	67	C	99	c
4	EOT	36	$	68	D	100	d
5	ENQ	37	%	69	E	101	e
6	ACK	38	&	70	F	102	f
7	BEL	39	'	71	G	103	g
8	BS	40	(	72	H	104	h
9	HT	41	)	73	I	105	i
10	LF	42	*	74	J	106	j
11	VT	43	+	75	K	107	k
12	FF	44	,	76	L	108	l
13	CR	45	-	77	M	109	m
14	SO	46	.	78	N	110	n
15	SI	47	/	79	O	111	o
16	DLE	48	0	80	P	112	p
17	DC1	49	1	81	Q	113	q
18	DC2	50	2	82	R	114	r
19	DC3	51	3	83	S	115	s
20	DC4	52	4	84	T	116	t
21	NAK	53	5	85	U	117	u
22	SYN	54	6	86	V	118	v
23	ETB	55	7	87	W	119	w
24	CAN	56	8	88	X	120	x
25	EM	57	9	89	Y	121	y
26	SUB	58	:	90	Z	122	z
27	ESC	59	;	91	[	123	{
28	FS	60	<	92	\	124	|
29	GS	61	=	93	]	125	}
30	RS	62	>	94	^	126	~
31	US	63	?	95	_	127	DEL

```
int a, b, c;
char d;

. . .

a = 3;
b = 5;
c = a + b;
d = 'a';

. . .

a = 4;
b = 2;
c = a - b;
d = 'W';
```

Declare

Initialize

Update

EXPRESSIONS

```
a + b
x = y
c = a + b
x <= y
x == y
++i
```

STATEMENTS

```
a = 3;
c = a + b;
++i;
printf("Area = %f", area);
;
```

Normal Statements

```
{
    pi = 3.141593;
    circumference = 2. * pi * radius;
    area = pi * radius * radius;
}
```

Compound Statements

SYMBOLIC CONSTANTS

```
#define  name  text
```

```
#define   TAXRATE   0.23

#define   PI   3.141593

#define   TRUE    1
#define   FALSE   0

#define   FRIEND   "Susan"
```

```
area = PI * radius * radius;
```

```
area = 3.141593 * radius * radius;
```

```
#define   PI   3.141593;
```

```
area = 3.141593; * radius * radius;
```

THANK YOU

C and C++ Programming Lecture Series

End of Lecture 2

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